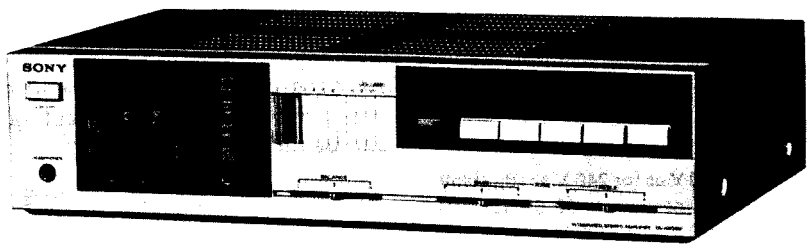
TA-AX360

SERVICE MANUAL

US Model
AEP Model
UK Model



SPECIFICATIONS

AUDIO POWER SPECIFICATIONS
(US model)

POWER OUTPUT AND TOTAL HARMONIC DISTORTION:

With 8 ohm loads, both channels driven, from 20 – 20,000 Hz; read 50 watts per channel minimum RMS power, with no more than 0.05% total harmonic distortion from 250 milliwatts to rated output.

Amplifier section

Continuous RMS power output
(AEP, UK, model) At 1 kHz, 0.05% THD
48 + 48 watts (8 ohms)
At 40 Hz – 20 kHz, 0.05% THD
47 + 47 watts (8 ohms)
According to DIN 45500
47 + 47 watts

Power bandwidth (IHF)
5 Hz - 40 kHz

Dynamic headroom
1.2 dB ('78 IHF)

Harmonic distortion
Less than 0.05% at rated output

Intermodulation (IM) distortion
(60 Hz : 7 kHz = 4 : 1) Less than 0.05% at rated output

Frequency response
PHONO : RIAA equalization curve ±0.5 dB
TUNER, CD, AUX, TAPE: 15 Hz - 70 kHz $^{+0}_{-3}$ dB

Residual noise Less than 100 μV (8 ohms, network A)

Damping factor 36 (8 ohms, 1 kHz)

Inputs

	Sensitivity	Impedance	Maximum input capability (1 kHz)	S/N (weighting network, input level)
PHONO	2.0 mV	50 kilohms	120 mV	73 dB 76 dB* (A, 2.0 mV)
TUNER CD AUX TAPE 1, 2	150 mV	50 kilohms	—	100 dB 85 dB* (A, 150 mV)

* '78 IHF

Outputs
REC OUT
Voltage 150 mV
Impedance 4.7 kilohms
SPEAKER
Accepts speakers of 8 - 16 ohms.
HEADPHONES
Accepts low and high impedance headphones.

– Continued on Page 2 –

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

INTEGRATED STEREO AMPLIFIER

SONY®

MICROFILM

AUD

Tone controls	BASS ±8 dB at 100 Hz (turnover freq. 300 Hz) TREBLE ±7 dB at 10 kHz (turnover freq. 3 kHz)
Loudness (Att. 30 dB)	6 dB at 100 Hz

General

System	
	Preamplifier section : low-noise IC NF type equalizer amplifier
	Power amplifier section : quasi-complementary SEPP OTL OCL power amplifier with all stages direct coupled
Power requirements	
	US model: 120 V ac, 60 Hz
	AEP model: 220 V ac (or 240 V ac adjustable by authorized Sony personnel), 50/60 Hz
	UK model: 240 V ac (or 220 V ac adjustable by authorized Sony personnel), 50 Hz
Power consumption	
	US, AEP model: 105 watts
	UK model: 90 watts
AC outlets	AEP, UK model: 3 switched, total 100 watts max.
	US model: 2 switched, total 100 watts max. 1 unswitched, 100 watts max.
Dimensions	Approx. 430 × 105 × 280 mm (w/h/d) ($17^{1}/_{8} \times 4^{1}/_{4} \times 11^{1}/_{8}$ inches) including projecting parts and controls
Weight	Approx. 6 kg (13 lbs 4 oz) net Approx. 6.8 kg (15 lbs) in shipping carton

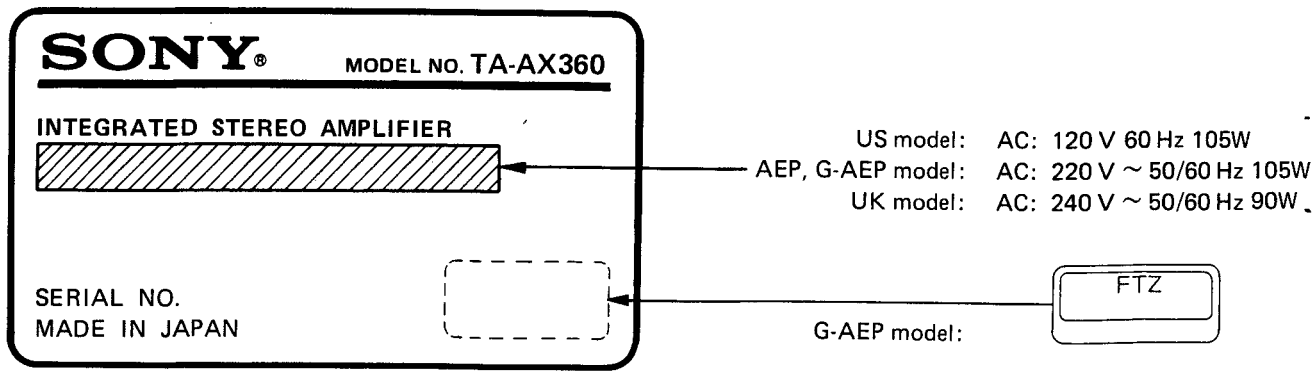
FEATURES

The TA-AX360 integrated stereo amplifier provides dynamic sound. The block diagram of the amplifier is shown on its attractive front display and enables the signal flow to be read at a single glance.

- Power output of 47 + 47 watts (40 Hz - 20 kHz, 0.05% THD).
- Independent CD (Compact Disc) inputs for connecting a CD player to your stereo system.
- Ability to drive two pairs of speaker systems either individually or simultaneously.
- A second tape recorder input on the front panel for tape playback. Using this input, tape-to-tape duplication can be made.

MODEL IDENTIFICATION

– Specification Label –


SONY®
MODEL NO. TA-AX360
INTEGRATED STEREO AMPLIFIER
SERIAL NO.
MADE IN JAPAN
US model: AC: 120 V 60 Hz 105W
AEP, G-AEP model: AC: 220 V ~ 50/60 Hz 105W
UK model: AC: 240 V ~ 50/60 Hz 90W
G-AEP model:
FTZ

SECTION 1
OUTLINE

SAFETY CHECK-OUT (US Model)

After correcting the original service problem, perform the following safety check before releasing the set to the customer:
Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

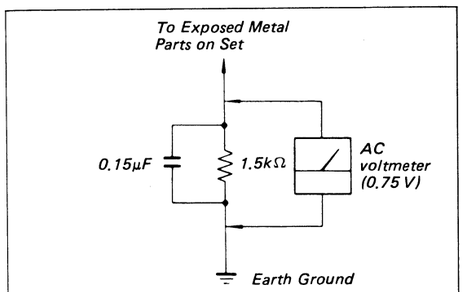
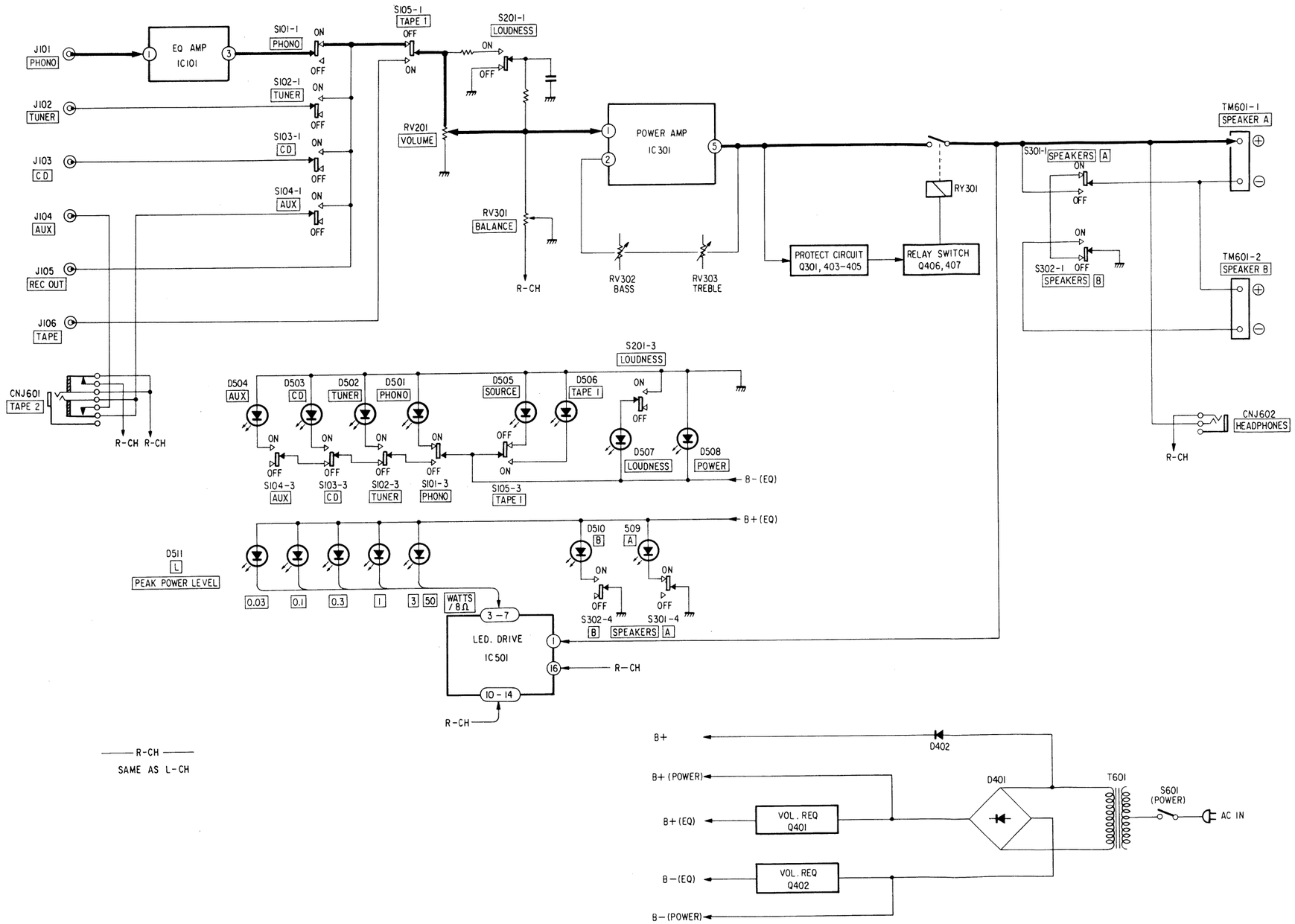


Fig. A. Using an AC voltmeter to check AC leakage.

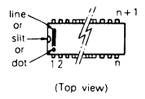
1-1. BLOCK DIAGRAM



SECTION 3
DIAGRAMS

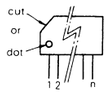
• Semiconductor Lead Layouts

TA7666P

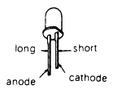


10E-2
1S953-7
HZ12C3L

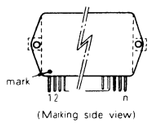
M5219L



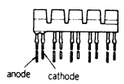
GL-5NG27



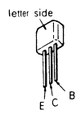
STK4893
STK4913



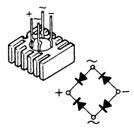
SLP252B-50



2SC2785



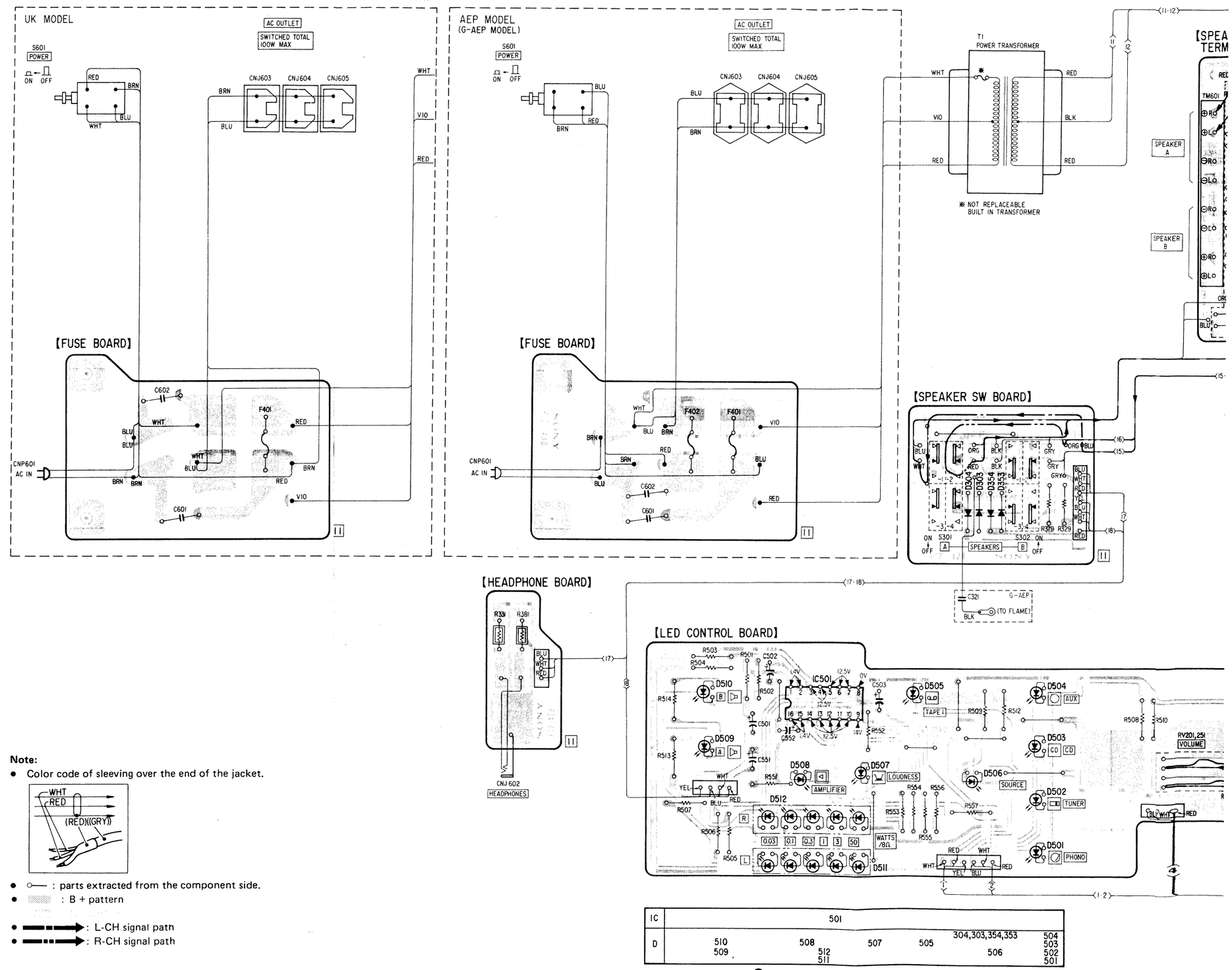
D5FB20F



2SA1049
2SC2458

2SB834
2SD880

3-1. MOUNTING DIAGRAM – *Conductor Side* – AEP, G-AEP, UK Model



Note:

- Color code of sleeving over the end of the jacket.

- ○— : parts extracted from the component side.
- ▒▒ : B + pattern
- ▬▬▶ : L-CH signal path
- ▬·▬▶ : R-CH signal path

IC	501					
D	510 509	508 512 511	507	505	304,303,354,353 506	504 503 502 501

【SPEAKER TERMINAL BOARD】

【POWER IC BOARD】

【AUX BOARD】

【MAIN BOARD】

Q	301 351
D	301 351

Q, IC	D
	402
	401
IC101	
402	404
401	403,302 305
406,407 405,404 403	405

	504
	503
	502
	501

3-2. SCHEMATIC DIAGRAM | AEP, G-AEP, UK Model

【MAIN BOARD】

IC101 M5219L
EQ AMP

【AUX BOARD】

【POWER IC BOARD】

IC301 STK4893
POWER AMP

Q301 2SA1049
PC PROTECT

D301 IS953

D303,304,353,354
IS953

【SPEAKER SW BOARD(1/2)】

D302,305
IS953

Q404,405
2SC2785
DC DET

【SPEAKER TERMINAL BOARD(1/2)】

【LED CONTROL BOARD】

D501-510 GL-5NG27

D511,512 SLP252B

IC501 TA7666P
LED DRIVE

Q351 2SA1049
PC PROTECT

D351 IS953

Q403 2SC2785
CURRENT DET

Q406,407 2SC2785
RELAY SWITCH

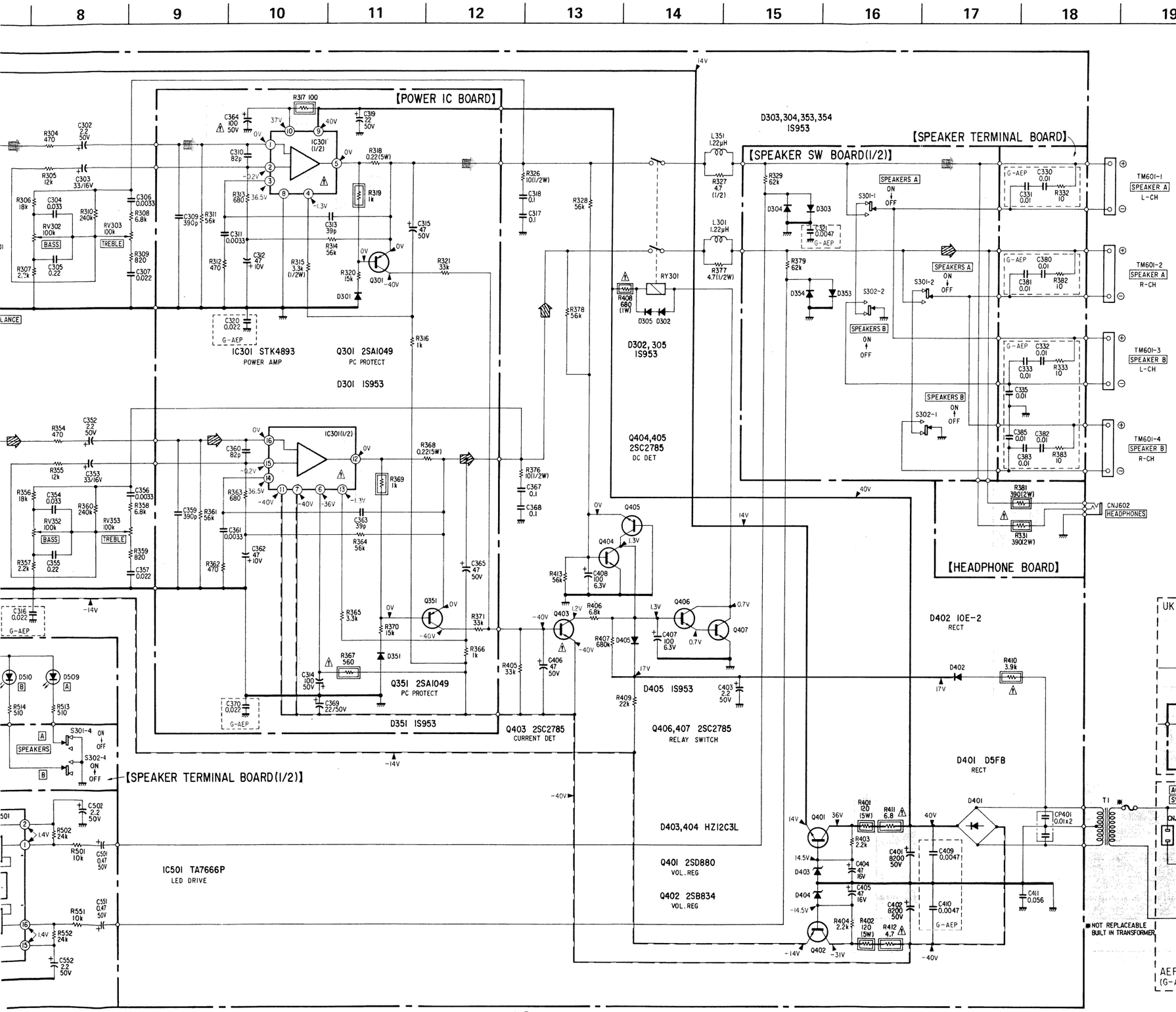
D405 IS953

D403,404 HZ12C3L

Q401 2SD880
VOL.REG

Q402 2SB834
VOL.REG

TA-AX360



Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrokytics and tantalums.
- All resistors are in ohms. kΩ : 1000 Ω, MΩ : 1000 kΩ
- : nonflammable resistor.
- : panel designation.
- : B+ bus.
- : B- bus.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no-signal conditions with a VOM.
- Voltage variations may be noted due to normal production tolerances.
- Switches

Ref. No.	Switch	Position
S101	PHONO	ON
S102	TUNER	OFF
S103	CD	OFF
S104	AUX	OFF
S105	TAPE	OFF
S201	LOUDNESS	OFF
S301	SPEAKERS A	ON
S302	SPEAKERS B	OFF
S601	POWER	OFF

- : L-ch signal path
- : R-ch signal path

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Voltages are measured with a VOM (50kΩ/V).

3-3. MOUNTING DIAGRAM — *Conductor Side* — US Model

• Refer to page 7 for note.

【FUSE BOARD】

【SPEAKER TERMINAL BOARD】

【POWER IC BOARD】

【SPEAKER SW BOARD】

【AUX BOARD】

【HEADPHONE BOARD】

【LED CONTROL BOARD】

Q	301 351
D	301 351

IC	501					
D	510 509	508 512 511	507	505	304,303,354,353 506	504 503 502 501

8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

A B C D E F G H I J

【SPEAKER TERMINAL BOARD】

【POWER IC BOARD】

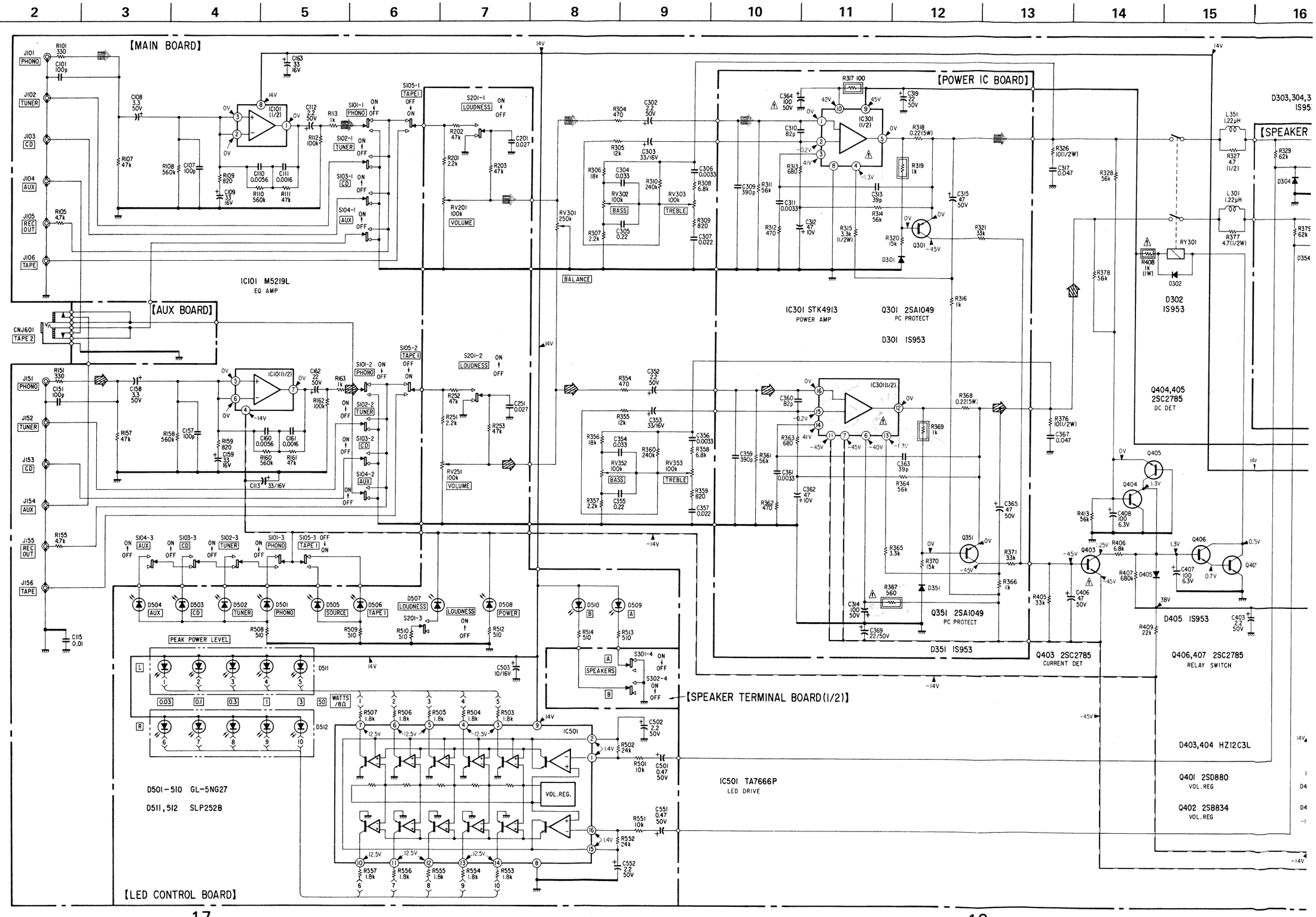
【AUX BOARD】

【MAIN BOARD】

Q	301 351
D	301 351

Q, IC	D
	402
	401
IC101	
402	404
401	403,302
406,407 405,404 403	405

3-4. SCHEMATIC DIAGRAM US Model • Refer to page 13 for note.



TA-AX360

8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

A B C D E F G H I J

【POWER IC BOARD】

【SPEAKER TERMINAL BOARD】

【SPEAKER SW BOARD(1/2)】

【HEADPHONE BOARD】

【SPEAKER TERMINAL BOARD(1/2)】

【FUSE BOARD】

IC301 STK4913
POWER AMP

Q301 2SA1049
PC PROTECT

D301 IS953

D302
IS953

Q404,405
2SC2785
DC DET

D303,304,353,354
IS953

Q351 2SA1049
PC PROTECT

D351 IS953

Q403 2SC2785
CURRENT DET

Q406,407 2SC2785
RELAY SWITCH

D405 IS953

D403,404 HZI2C3L

Q401 2SD880
VOL.REG

Q402 2SB834
VOL.REG

D402 10E-2
RECT

D401 D5FB
RECT

IC501 TA7666P
LED DRIVE

BALANCE

BASS

TREBLE

SPEAKERS

SPEAKERS A

SPEAKERS B

ON
OFF

VOL.REG.

AC OUTLET
SWITCHED
UNSWITCHED

POWER

TM601-1 SPEAKER A L-CH
TM601-2 SPEAKER A R-CH
TM601-3 SPEAKER B L-CH
TM601-4 SPEAKER B R-CH

CNJ602 HEADPHONES

CNJ603

CNP601 AC IN

F401 4A/125V

C601 0.01

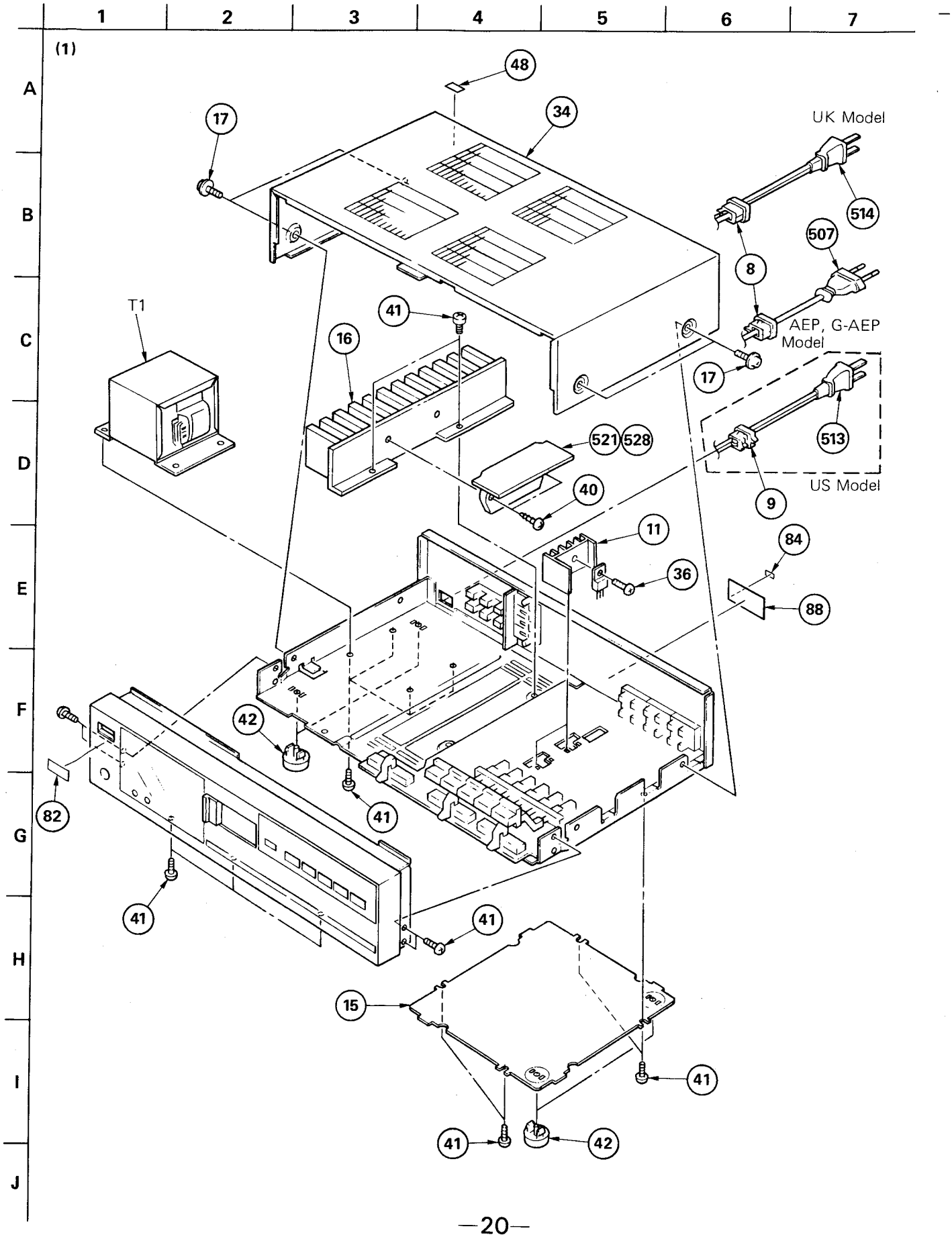
CP401 0.01×2

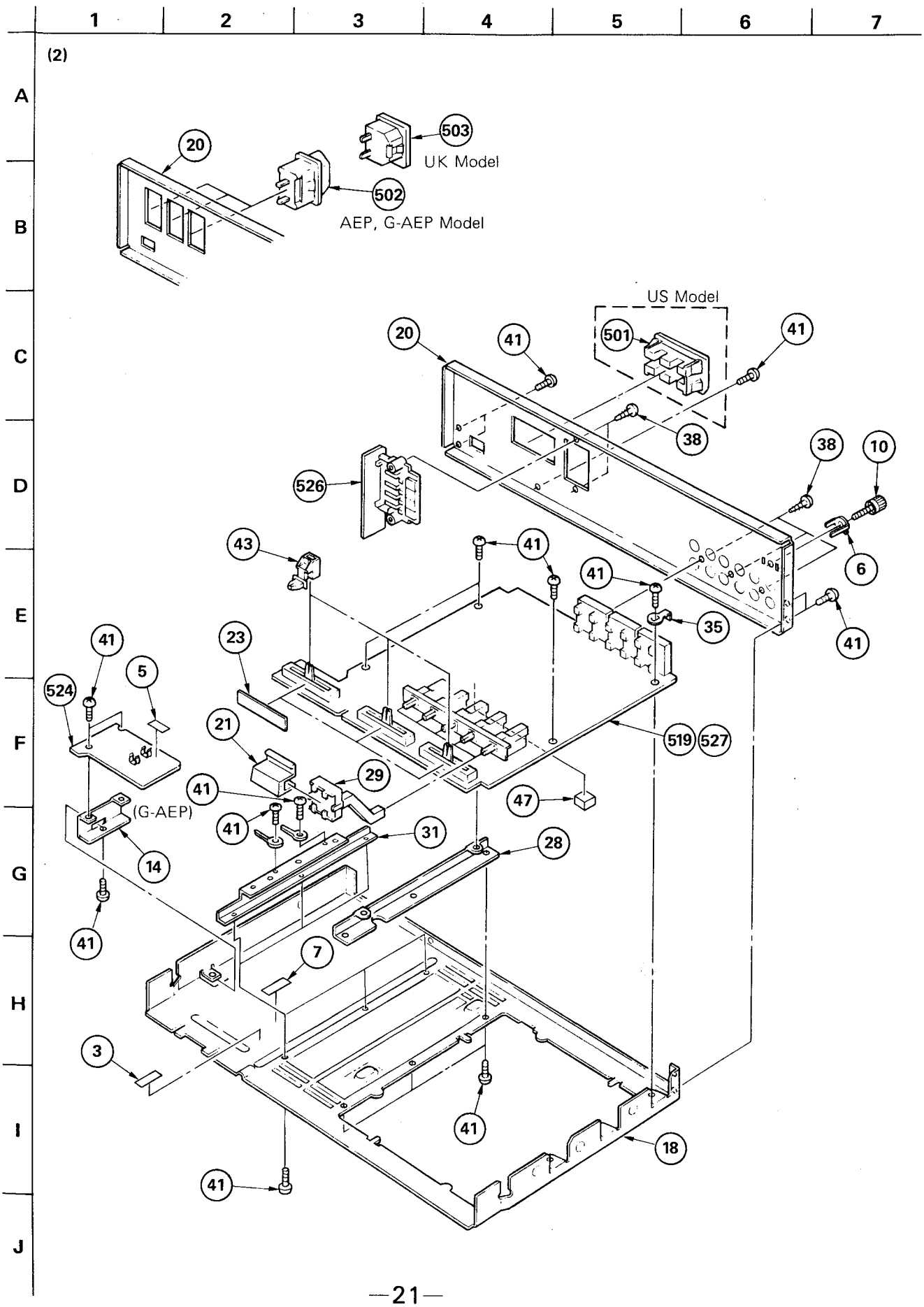
C411 0.001

T1

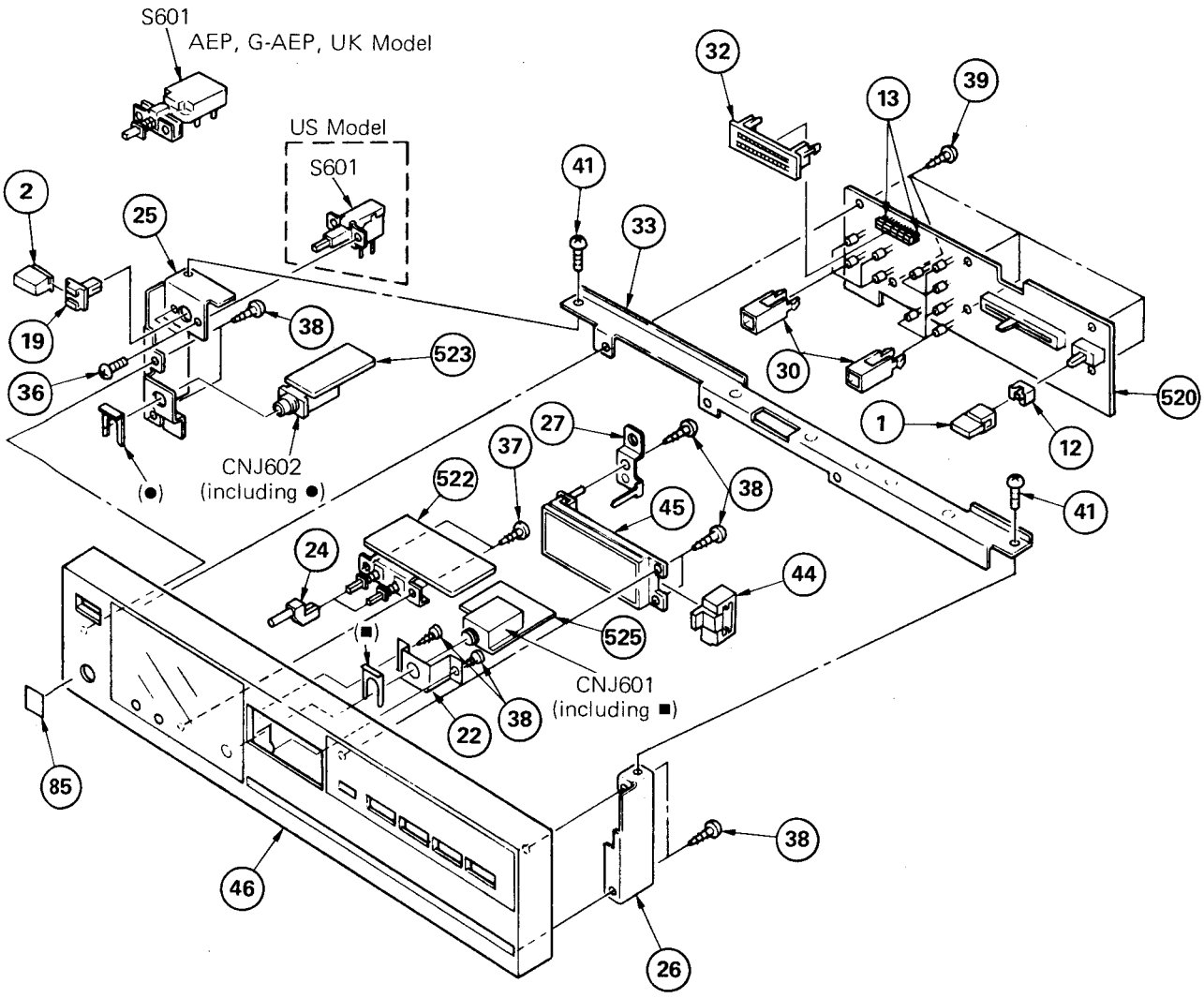
*NOT REPLACEABLE
BUILT IN TRANSFORMER

SECTION 4
EXPLODED VIEWS AND PARTS LIST




1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
I
J
(2)
20
503
UK Model
502
AEP, G-AEP Model
US Model
501
41
38
10
526
43
6
35
23
5
524
519
527
21
29
47
(G-AEP)
31
28
14
7
3
18

(3)


S601
AEP, G-AEP, UK Model
US Model
S601
CNJ602
(including ●)
CNJ601
(including ■)
2
25
19
36
38
523
(●)
41
33
32
13
39
30
1
12
520
41
27
37
38
45
522
24
44
(■)
525
22
38
85
46
38
26

GENERAL SECTION

No.	Part No.	Description
1	3-315-105-21	(BLACK)....KNOB (5X16), SQUARE
1	4-881-704-81	(SILVER)...KNOB (5X16), SQUARE
2	3-318-911-01	(SILVER)...KNOB (POWER.L), T MOLD
2	3-318-911-11	(BLACK)....KNOB (POWER.L), T MOLD
3	3-701-030-00	LABEL, SERIAL NUMBER
4	3-701-748-00	CLAMP
5 ♣	3-701-946-26	(US)....LABEL, FUSE
6	3-701-993-00	SPACER, TERMINAL
7	3-703-044-26	(US)....LABEL, CAUTION
8	3-703-244-02	(AEP,G-AEP,UK)...BUSHING, CORD
9	3-703-571-00	(US)....BUSHING (S), CORD
10	3-706-165-00	SCREW
11 ♣	4-363-146-00	HEAT SINK, V.OUT
12	4-864-307-00	RING
13 ♣	4-866-397-00	CUSHION, LED
14 ♣	4-881-414-00	BRACKET (FUSE)
15 ♣	4-881-424-00	PLATE, BOTTOM
16 ♣	4-881-726-00	HEAT SINK (B)
17	4-889-321-01	(SILVER)...SCREW
17	4-889-321-11	(BLACK)....SCREW
18 ♣	4-889-335-11	CHASSIS
19 ♣	4-902-831-01	JOINT (G), KNOB
20 ♣	4-904-406-01	(AEP,G-AEP)...PLATE, JACK
20 ♣	4-904-407-01	(UK).....PLATE, JACK
20 ♣	4-904-408-01	(US).....PLATE, JACK
21	4-904-419-01	(SILVER)...KNOB (PUSH C), T
21	4-904-419-11	(BLACK)....KNOB (PUSH C), T
22 ♣	4-904-420-01	HOLDER, JACK
23 ♣	4-904-424-01	PLATE, BACK, SLIDE
24	4-904-425-01	KNOB (SPEAKER), PUSH
25 ♣	4-904-426-01	PANEL (LEFT), SUB
26 ♣	4-904-427-01	PANEL (RIGHT), SUB
27 ♣	4-904-428-01	PLATE, GROUND
28 ♣	4-904-431-01	FRAME, CENTER
29 ♣	4-904-433-01	JOINT, PUSH KNOB
30 ♣	4-904-435-01	HOLDER, LED
31 ♣	4-904-436-01	FRAME (LEFT)
32 ♣	4-904-437-01	HOLDER (5 GANG), LED
33 ♣	4-904-438-01	FRAME, PANEL
34	4-904-440-01	(SILVER)...CASE
34	4-904-440-11	(BLACK)....CASE
35 ♣	4-904-446-01	PLATE, GROUND
36	7-682-547-09	SCREW +B 3X6
37	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S

GENERAL SECTION

No.	Part No.	Description
38	7-685-646-11	SCREW +BVTP 3X8 TYPE2 N-S
39	7-685-648-19	SCREW +BVTP 3X12 TYPE2 N-S
40	7-685-649-21	SCREW +BVTP 3X14 TYPE2 N-S
41	7-685-871-01	SCREW +BVTT 3X6 (S)
42	X-3701-069-0	FOOT ASSY, M.F
43	X-4904-401-1	(SILVER)...KNOB ASSY, SLIDE
43	X-4904-401-2	(BLACK)....KNOB ASSY, SLIDE
44	X-4904-402-1	(BLACK)....JOINT ASSY, CONTROL KNOB
44	X-4904-403-1	(SILBER)...JOINT ASSY, CONTROL KNOB
45	X-4904-404-1	(SILBER)...GUIDE ASSY, CONTROL KNOB
45	X-4904-405-1	(BLACK)....GUIDE ASSY, CONTROL KNOB
46	X-4904-410-1	(BLACK)....PANEL ASSY
46	X-4904-411-1	(SILBER)...PANEL ASSY
47	9-911-843-XX	CUSHION
48	4-881-045-00	LABEL, CAUTION

ACCESSORY & PACKING MATERIAL

No.	Part No.	Description
81	3-701-630-00	BAG, POLYETHYLENE
82	3-701-690-00	(UK)....LABEL (MADE IN JAPAN)
83	3-703-390-01	(US)....INSTRUCTION
84 ♣	3-703-591-01	(G-AEP)...LABEL (23585S)(SMALL), FTZ
85	3-703-713-01	STICKER, SONY SYMBOL (10)
86	3-773-744-11	(AEP,UK)...MANUAL, INSTRUCTION
86	3-773-744-21	(US).....MANUAL, INSTRUCTION
86	3-773-744-41	(AEP).....MANUAL, INSTRUCTION
86	3-773-744-51	(G-AEP)....MANUAL, INSTRUCTION
87	4-858-078-00	SHEET, PROTECTION
88 ♣	4-904-415-01	(US).....LABEL, MODEL NUMBER
88 ♣	4-904-417-01	(AEPP)....LABEL, MODEL NUMBER
88 ♣	4-904-417-11	(G-AEP)...LABEL, MODEL NUMBER
88 ♣	4-904-418-01	(UK).....LABEL, MODEL NUMBER
89	4-904-442-01	CUSHION (LEFT), LOWER
90	4-904-443-01	CUSHION (RIGHT), LOWER
91	4-904-444-01	CUSHION (LEFT), UPPER
92	4-904-445-01	CUSHION (RIGHT), UPPER
93	4-904-449-01	INDIVIDUAL CARTON

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked " ♣ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part numbers (Δ-ΔΔΔ-ΔΔΔ-XX or Δ-ΔΔΔΔ-ΔΔΔ-X) may be different from those used in the set.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:

- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:μF, PF:μμF.

COILS

- MMH : mH, UH : μH

SEMICONDUCTORS

In each case, U : μ, for example:
UA···: μA···, UPA···: μPA···,
UPC···: μPC, UPD···: μPD···

ELECTRICAL PARTS

Ref.No.	Part No.	Description
501	⚠1-526-574-00	OUTLET, AC (3 GANG)(CNJ603-605)
502	⚠1-526-694-00	(AEP,G-AEP)...OUTLET, AC (CNJ603-605)
503	⚠1-526-751-00	(UK).....OUTLET, AC (CNJ603-605)
504	⚠1-532-204-00	(AEP,G-AEP,UK)...QUICK-ACTING FUSE (F401,402)
505	⚠1-532-579-00	(US).....FUSE, GLASS TUBE (F401)
506	1-533-131-00	HOLDER, FUSE
507	⚠1-534-817-XX	(AEP,G-AEP)....CORD, POWER, EULO PLUG (CNP601)
508	●;1-535-115-00	(UK)....TERMINAL
509	●;1-535-116-00	TERMINAL
510	●;1-535-139-00	BASE POST 22MM (10MM PITCH) 2P
511	●;1-535-140-00	(AEP,G-AEP,UK)...BASE POST 22MM (10MM PITCH) 3P
512	1-535-416-00	(AEP,G-AEP)....TERMINAL
513	⚠1-551-628-00	(US)....CORD, POWER (CNP601)
514	⚠1-551-884-00	(UK)....CORD, POWER (CNP601)
515	●;1-562-249-00	SOCKET, CONNECTOR 4P
516	●;1-562-251-00	SOCKET, CONNECTOR 6P
517	●;1-562-327-00	SOCKET, CONNECTOR 3P
518	●;1-562-328-00	SOCKET, CONNECTOR 7P
519	●;1-612-425-11	PC BOARD, MAIN
520	●;1-612-426-11	PC BOARD, LED.VOL
521	●;1-612-427-11	PC BOARD, POWER IC
522	●;1-612-428-11	PC BOARD, SPEAKER SW
523	●;1-612-429-11	PC BOARD, HEADPHONE
524	●;1-612-430-11	PC BOARD, FUSE
525	●;1-612-431-11	PC BOARD, AUX
526	●;1-612-432-11	PC BOARD, SPEAKER TERMINAL
527	●;A-4388-389-A	(AEP,UK)...MOUNTED PCB, MAIN
527	●;A-4388-390-A	(G-AEP)....MOUNTED PCB, MAIN
527	●;A-4388-391-A	(US).....MOUNTED PCB, MAIN
528	●;A-4409-869-A	(AEP,G-AEP,UK)...MOUNTED PCB, IC, POWER
528	●;A-4409-870-A	(US).....MOUNTED PCB, IC, POWER
C101	1-161-271-00	(US,AEP,UK)...CERAMIC 100PF 5% 50V
C101	1-161-315-00	(G-AEP).....CERAMIC 220PF 10% 50V
C102	1-161-315-00	(G-AEP).....CERAMIC 220PF 10% 50V
C103	1-161-315-00	(G-AEP).....CERAMIC 220PF 10% 50V
C104	1-161-315-00	(G-AEP).....CERAMIC 220PF 10% 50V
C105	1-161-315-00	(G-AEP).....CERAMIC 220PF 10% 50V
C106	1-161-315-00	(G-AEP).....CERAMIC 220PF 10% 50V
C107	1-161-271-00	CERAMIC 100PF 5% 50V
C108	1-123-382-00	ELECT 3.3MF 20% 50V
C109	1-123-318-00	ELECT 33MF 20% 16V
C110	1-108-573-00	MYLAR 0.0056MF 5% 50V

ELECTRICAL PARTS

Ref.No.	Part No.	Description
C111	1-108-560-00	MYLAR 0.0016MF 5% 50V
C112	1-123-381-00	ELECT 2.2MF 20% 50V
C113	1-123-318-00	ELECT 33MF 20% 16V
C114	1-161-315-00	(G-AEP)....CERAMIC 220PF 10% 50V
C115	1-161-330-00	CERAMIC 0.01MF 30% 25V
C116	1-161-269-00	(G-AEP)....CERAMIC 68PF 5% 50V
C151	1-161-271-00	(US,AEP,UK)...CERAMIC 100PF 5% 50V
C151	1-161-315-00	(G-AEP).....CERAMIC 220PF 10% 50V
C152	1-161-315-00	(G-AEP)....CERAMIC 220PF 10% 50V
C153	1-161-315-00	(G-AEP)....CERAMIC 220PF 10% 50V
C154	1-161-315-00	(G-AEP)....CERAMIC 220PF 10% 50V
C155	1-161-315-00	(G-AEP)....CERAMIC 220PF 10% 50V
C156	1-161-315-00	(G-AEP)....CERAMIC 220PF 10% 50V
C157	1-161-271-00	CERAMIC 100PF 5% 50V
C158	1-123-382-00	ELECT 3.3MF 20% 50V
C159	1-123-318-00	ELECT 33MF 20% 16V
C160	1-108-573-00	MYLAR 0.0056MF 5% 50V
C161	1-108-560-00	MYLAR 0.0016MF 5% 50V
C162	1-123-381-00	ELECT 2.2MF 20% 50V
C163	1-123-318-00	ELECT 33MF 20% 16V
C164	1-161-315-00	(G-AEP)....CERAMIC 220PF 10% 50V
C166	1-161-269-00	(G-AEP)....CERAMIC 68PF 5% 50V
C201	1-130-625-00	FILM 0.027MF 5% 50V
C251	1-130-625-00	FILM 0.027MF 5% 50V
C302	1-123-381-00	ELECT 2.2MF 20% 50V
C303	1-123-318-00	ELECT 33MF 20% 16V
C304	1-130-626-00	FILM 0.033MF 5% 50V
C305	1-130-636-00	FILM 0.22MF 5% 50V
C306	1-108-567-00	MYLAR 0.0033MF 5% 50V
C307	1-130-624-00	FILM 0.022MF 5% 50V
C309	1-161-318-00	CERAMIC 390PF 10% 50V
C310	1-102-971-85	CERAMIC 82PF 5% 50V
C311	1-102-123-00	CERAMIC 0.0033MF 10% 50V
C312	1-123-306-00	ELECT 47MF 20% 10V
C313	1-161-266-00	CERAMIC 39PF 5% 50V
C314	⚠1-123-513-00	ELECT 100MF 20% 50V
C315	1-123-512-00	ELECT 47MF 20% 50V
C316	1-161-494-00	(G-AEP)....CERAMIC 0.022MF 30% 25V
C317	1-130-628-00	(US)....FILM 0.047MF 5% 50V
C317	1-136-165-00	(AEP,G-AEP,UK)...FILM 0.1MF 5% 50V
C318	1-136-165-00	(AEP,G-AEP,UK)...FILM 0.1MF 5% 50V
C319	1-123-510-91	ELECT 22MF 20% 50V
C320	1-101-005-00	(G-AEP)....CERAMIC 0.022MF 50V
C321	1-161-328-00	(G-AEP)....CERAMIC 0.0047MF 30% 50V
C330	1-136-153-00	(G-AEP)....FILM 0.01MF 5% 50V
C331	1-136-153-00	(G-AEP)....FILM 0.01MF 5% 50V

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In each case, U : μ, for example:
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C332	1-136-153-00	(G-AEP)....FILM 0.01MF 5% 50V
C333	1-136-153-00	(G-AEP)....FILM 0.01MF 5% 50V
C335	1-136-153-00	(G-AEP)....FILM 0.01MF 5% 50V
C352	1-123-381-00	ELECT 2.2MF 20% 50V
C353	1-123-318-00	ELECT 33MF 20% 16V
C354	1-130-626-00	FILM 0.033MF 5% 50V
C355	1-130-636-00	FILM 0.22MF 5% 50V
C356	1-108-567-00	MYLAR 0.0033MF 5% 50V
C357	1-130-624-00	FILM 0.022MF 5% 50V
C359	1-161-318-00	CERAMIC 390PF 10% 50V
C360	1-102-971-85	CERAMIC 82PF 5% 50V
C361	1-102-123-00	CERAMIC 0.0033MF 10% 50V
C362	1-123-306-00	ELECT 47MF 20% 10V
C363	1-161-266-00	CERAMIC 39PF 5% 50V
C364 ⚠	1-123-513-00	ELECT 100MF 20% 50V
C365	1-123-512-00	ELECT 47MF 20% 50V
C367	1-130-628-00	(US).....FILM 0.047MF 5% 50V
C367	1-136-165-00	(AEP,G-AEP,UK)...FILM 0.1MF 5% 50V
C368	1-136-165-00	(AEP,G-AEP,UK)...FILM 0.1MF 5% 50V
C369	1-123-510-91	ELECT 22MF 20% 50V
C370	1-101-005-00	(G-AEP)....CERAMIC 0.022MF 50V
C380	1-136-153-00	(G-AEP)....FILM 0.01MF 5% 50V
C381	1-136-153-00	(G-AEP)....FILM 0.01MF 5% 50V
C382	1-136-153-00	(G-AEP)....FILM 0.01MF 5% 50V
C383	1-136-153-00	(G-AEP)....FILM 0.01MF 5% 50V
C385	1-136-153-00	(G-AEP)....FILM 0.01MF 5% 50V
C401 ⚠	1-125-292-00	ELECT(BLOCK) 8200MF 20% 50V
C402 ⚠	1-125-292-00	ELECT(BLOCK) 8200MF 20% 50V
C403	1-123-381-00	ELECT 2.2MF 20% 50V
C404	1-123-319-00	ELECT 47MF 20% 16V
C405	1-123-319-00	ELECT 47MF 20% 16V
C406	1-123-816-11	ELECT 47MF 20% 50V
C407	1-123-307-00	ELECT 100MF 20% 6.3V
C408	1-123-307-00	ELECT 100MF 20% 6.3V
C409	1-161-328-00	(G-AEP).CERAMIC 0.0047MF 30% 50V
C410	1-161-328-00	(G-AEP).CERAMIC 0.0047MF 30% 50V
C411	1-136-162-00	(G-AEP)....FILM 0.056MF 5% 50V
C501	1-123-610-00	ELECT 0.47MF 20% 50V
C502	1-123-612-00	ELECT 2.2MF 20% 50V
C503	1-123-617-00	ELECT 10MF 20% 16V
C551	1-123-610-00	ELECT 0.47MF 20% 50V
C552	1-123-612-00	ELECT 2.2MF 20% 50V
C601 ⚠	1-161-744-00	CAP, CERAMIC 10000PF FZ
C602 ⚠	1-161-744-00	CAP, CERAMIC 10000PF FZ
CNJ601	1-507-825-00	JACK, LARGE TYPE
CNJ602	1-507-863-21	JACK, LARGE TYPE
CP401	1-102-394-00	CERAMIC 0.01MF 250V

ELECTRICAL PARTS

Ref.No.	Part No.	Description
D301	8-719-107-57	DIODE 1S593-7
D302	8-719-107-57	DIODE 1S593-7
D303	8-719-107-57	DIODE 1S593-7
D304	8-719-107-57	DIODE 1S593-7
D305	8-719-107-57	(AEP,G-AEP,UK)...DIODE 1S593-7
D351	8-719-107-57	DIODE 1S593-7
D352	8-719-107-57	DIODE 1S593-7
D353	8-719-107-57	DIODE 1S593-7
D354	8-719-107-57	DIODE 1S593-7
D401	8-719-500-09	DIODE D5FB20F
D402	8-719-200-02	DIODE 10E2
D403	8-719-910-29	DIODE HZ12C3L
D404	8-719-910-29	DIODE HZ12C3L
D405	8-719-107-57	DIODE 1S953-7
D501	8-719-918-57	DIODE GL-5NG27
D502	8-719-918-57	DIODE GL-5NG27
D503	8-719-918-57	DIODE GL-5NG27
D504	8-719-918-57	DIODE GL-5NG27
D505	8-719-918-57	DIODE GL-5NG27
D506	8-719-918-57	DIODE GL-5NG27
D507	8-719-918-57	DIODE GL-5NG27
D508	8-719-918-57	DIODE GL-5NG27
D509	8-719-918-57	DIODE GL-5NG27
D510	8-719-918-57	DIODE GL-5NG27
D511	8-719-925-26	DIODE SLP252B-50
D512	8-719-925-26	DIODE SLP252B-50
IC101	8-759-202-40	IC M5219L
IC301 ⚠	8-749-948-93	(AEP,G-AEP,UK)...IC STK4893
IC301 ⚠	8-749-949-13	(US).....IC STK4913
IC501	8-759-202-40	IC TA7666P
J101	1-507-908-11	JACK, PIN 4P
J102	1-507-908-11	JACK, PIN 4P
J103	1-507-908-11	JACK, PIN 4P
J104	1-507-908-11	JACK, PIN 4P
J105	1-507-908-11	JACK, PIN 4P
J106	1-507-908-11	JACK, PIN 4P
J151	1-507-908-11	JACK, PIN 4P
J152	1-507-908-11	JACK, PIN 4P
J153	1-507-908-11	JACK, PIN 4P
J154	1-507-908-11	JACK, PIN 4P
J155	1-507-908-11	JACK, PIN 4P
J156	1-507-908-11	JACK, PIN 4P
L301 ♦	1-420-872-00	COIL, AIR CORE
L351 ♦	1-420-872-00	COIL, AIR CORE
Q301	8-728-204-91	TRANSISTOR 2SA1049
Q351	8-728-204-91	TRANSISTOR 2SA1049
Q401	8-728-288-02	TRANSISTOR 2SD880

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- MMH : mH, UH : μH

SEMICONDUCTORS

In each case, U : μ, for example:
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ELECTRICAL PARTS

Ref.No.	Part No.	Description			
Q402	8-729-283-42	TRANSISTOR 2SB834			
Q403 ⚠	8-729-178-54	TRANSISTOR 2SC2785			
Q404	8-729-245-83	TRANSISTOR 2SC2458			
Q405	8-729-245-83	TRANSISTOR 2SC2458			
Q406	8-729-245-83	TRANSISTOR 2SC2458			
Q407	8-729-245-83	TRANSISTOR 2SC2458			
R101	1-247-119-00	CARBON 330	5%	1/4W	
R102	1-247-123-00	(G-AEP)....CARBON	470	5%	1/4W
R103	1-247-123-00	(G-AEP)....CARBON	470	5%	1/4W
R104	1-247-123-00	(G-AEP)....CARBON	470	5%	1/4W
R105	1-247-147-00	CARBON 4.7K	5%	1/4W	
R106	1-247-123-00	(G-AEP)....CARBON	470	5%	1/4W
R107	1-247-171-00	CARBON 47K	5%	1/4W	
R108	1-246-539-00	CARBON 560K	5%	1/4W	
R109	1-246-471-00	CARBON 820	5%	1/4W	
R110	1-246-539-00	CARBON 560K	5%	1/4W	
R111	1-247-171-00	CARBON 47K	5%	1/4W	
R112	1-247-179-00	CARBON 100K	5%	1/4W	
R113	1-247-131-00	CARBON 1K	5%	1/4W	
R114	1-246-465-00	(G-AEP)....CARBON	470	5%	1/4W
R115	1-246-477-00	(G-AEP)....CARBON	1.5K	5%	1/4W
R151	1-247-119-00	CARBON 330	5%	1/4W	
R152	1-247-123-00	(G-AEP)....CARBON	470	5%	1/4W
R153	1-247-123-00	(G-AEP)....CARBON	470	5%	1/4W
R154	1-247-123-00	(G-AEP)....CARBON	470	5%	1/4W
R155	1-247-147-00	CARBON 4.7K	5%	1/4W	
R156	1-247-123-00	(G-AEP)....CARBON	470	5%	1/4W
R157	1-247-171-00	CARBON 47K	5%	1/4W	
R158	1-246-539-00	CARBON 560K	5%	1/4W	
R159	1-246-471-00	CARBON 820	5%	1/4W	
R160	1-246-539-00	CARBON 560K	5%	1/4W	
R161	1-247-171-00	CARBON 47K	5%	1/4W	
R162	1-247-179-00	CARBON 100K	5%	1/4W	
R163	1-247-131-00	CARBON 1K	5%	1/4W	
R164	1-247-123-00	(G-AEP)....CARBON	470	5%	1/4W
R165	1-246-477-00	(G-AEP)....CARBON	1.5K	5%	1/4W
R201	1-247-139-00	CARBON 2.2K	5%	1/4W	
R202	1-247-171-00	CARBON 47K	5%	1/4W	
R203	1-247-171-00	CARBON 47K	5%	1/4W	
R251	1-247-139-00	CARBON 2.2K	5%	1/4W	
R252	1-247-171-00	CARBON 47K	5%	1/4W	
R253	1-247-171-00	CARBON 47K	5%	1/4W	
R304	1-247-123-00	CARBON 470	5%	1/4W	
R305	1-246-499-00	CARBON 12K	5%	1/4W	
R306	1-247-161-00	CARBON 18K	5%	1/4W	

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R307	1-247-139-00	CARBON 2.2K	5%	1/4W	
R308	1-247-151-00	CARBON 6.8K	5%	1/4W	
R309	1-246-471-00	CARBON 820	5%	1/4W	
R310	1-246-530-00	CARBON 240K	5%	1/4W	
R311	1-247-173-00	CARBON 56K	5%	1/4W	
R312	1-247-123-00	CARBON 470	5%	1/4W	
R313	1-247-127-00	CARBON 680	5%	1/4W	
R314	1-247-173-00	CARBON 56K	5%	1/4W	
R315	1-244-885-00	CARBON 3.3K	5%	1/2W	
R316	1-247-131-00	CARBON 1K	5%	1/4W	
R317 ⚠	1-247-107-00	CARBON 100	5%	1/4W	F
R318	1-217-156-00	RES, METAL PLATE 0.22			
R319 ⚠	1-247-131-00	CARBON 1K	5%	1/4W	F
R320	1-247-159-00	CARBON 15K	5%	1/4W	
R321	1-247-167-00	CARBON 33K	5%	1/4W	
R326	1-244-825-00	CARBON 10	5%	1/2W	
R327	1-244-817-00	CARBON 4.7	5%	1/2W	
R328	1-247-173-00	CARBON 56K	5%	1/4W	
R329	1-246-514-00	CARBON 51K	5%	1/4W	
R331 ⚠	1-217-231-11	WIREWOUND 390	10%	2W	F
R332	1-247-083-00	(G-AEP)....CARBON	10	5%	1/4W
R333	1-247-083-00	(G-AEP)....CARBON	10	5%	1/4W
R354	1-247-123-00	CARBON 470	5%	1/4W	
R355	1-246-499-00	CARBON 12K	5%	1/4W	
R356	1-247-161-00	CARBON 18K	5%	1/4W	
R357	1-247-139-00	CARBON 2.2K	5%	1/4W	
R358	1-247-151-00	CARBON 6.8K	5%	1/4W	
R359	1-246-471-00	CARBON 820	5%	1/4W	
R360	1-246-530-00	CARBON 240K	5%	1/4W	
R361	1-247-173-00	CARBON 56K	5%	1/4W	
R362	1-247-123-00	CARBON 470	5%	1/4W	
R363	1-247-127-00	CARBON 680	5%	1/4W	
R364	1-247-173-00	CARBON 56K	5%	1/4W	
R365	1-244-885-00	CARBON 3.3K	5%	1/2W	
R366	1-247-131-00	CARBON 1K	5%	1/4W	
R367 ⚠	1-247-125-00	CARBON 560	5%	1/4W	F
R368	1-217-156-00	RES, METAL PLATE 0.22			
R369 ⚠	1-247-131-00	CARBON 1K	5%	1/4W	F
R370	1-247-159-00	CARBON 15K	5%	1/4W	
R371	1-247-167-00	CARBON 33K	5%	1/4W	
R376	1-244-825-00	CARBON 10	5%	1/2W	
R377	1-244-817-00	CARBON 4.7	5%	1/2W	
R378	1-247-173-00	CARBON 56K	5%	1/4W	
R379	1-246-514-00	CARBON 51K	5%	1/4W	
R381 ⚠	1-217-231-11	WIREWOUND 390	10%	2W	F

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ELECTRICAL PARTS

Ref.No.	Part No.	Description
R382	1-247-083-00	(G-AEP)....CARBON 10 5% 1/4W
R383	1-247-083-00	(G-AEP)....CARBON 10 5% 1/4W
R401 ⚠	1-217-311-11	(AEP,G-AEP,UK)...WIREWOUND 120 10% 5W F
R401 ⚠	1-217-312-00	(US).....WIREWOUND 150 10% 5W F
R402 ⚠	1-217-311-11	(AEP,G-AEP,UK)...WIREWOUND 120 10% 5W F
R402 ⚠	1-217-313-00	(US).....WIREWOUND 180 10% 5W F
R403	1-247-139-00	CARBON 2.2K 5% 1/4W
R404	1-247-139-00	CARBON 2.2K 5% 1/4W
R405	1-247-167-00	CARBON 33K 5% 1/4W
R406	1-247-151-00	CARBON 6.8K 5% 1/4W
R407	1-246-533-00	(AEP,G-AEP,UK)...CARBON 330K 5% 1/4W
R407	1-246-541-00	(US)....CARBON 680K 5% 1/4W
R408 ⚠	1-213-141-00	(AEP,G-AEP,UK)...METAL OXIDE 1K 5% 1W F
R408 ⚠	1-213-143-00	(US).....METAL OXIDE 1K 5% 1W F
R409	1-246-505-00	CARBON 22K 5% 1/4W
R410 ⚠	1-247-079-00	(US).....CARBON 4.7 5% 1/4W F
R410 ⚠	1-247-145-00	(AEP,G-AEP,UK)...CARBON 3.9K 5% 1/4W F
R411 ⚠	1-247-082-00	(AEP,G-AEP,UK)...SOLID 6.8 1/4W F
R412 ⚠	1-202-852-00	(AEP,G-AEP,UK)...SOLID 4.7 1/4W F
R413	1-247-173-00	CARBON 56K 5% 1/4W
R501	1-247-155-00	CARBON 10K 5% 1/4W
R502	1-246-506-00	CARBON 24K 5% 1/4W
R503	1-247-139-00	CARBON 2.2K 5% 1/4W
R504	1-247-139-00	CARBON 2.2K 5% 1/4W
R505	1-247-139-00	CARBON 2.2K 5% 1/4W
R506	1-247-139-00	CARBON 2.2K 5% 1/4W
R507	1-247-139-00	CARBON 2.2K 5% 1/4W
R508	1-246-466-00	CARBON 510 5% 1/4W
R509	1-246-466-00	CARBON 510 5% 1/4W
R510	1-246-466-00	CARBON 510 5% 1/4W
R512	1-246-466-00	CARBON 510 5% 1/4W
R513	1-246-466-00	CARBON 510 5% 1/4W
R514	1-246-466-00	CARBON 510 5% 1/4W
R551	1-247-155-00	CARBON 10K 5% 1/4W
R552	1-246-506-00	CARBON 24K 5% 1/4W
R553	1-247-139-00	CARBON 2.2K 5% 1/4W
R554	1-247-139-00	CARBON 2.2K 5% 1/4W
R555	1-247-139-00	CARBON 2.2K 5% 1/4W
R556	1-247-139-00	CARBON 2.2K 5% 1/4W
R557	1-247-139-00	CARBON 2.2K 5% 1/4W

ELECTRICAL PARTS

Ref.No.	Part No.	Description
RV201	1-230-417-11	RES, VAR, SLIDE 100K/100K (VOLUME)
RV251	1-230-417-11	RES, VAR, SLIDE 100K/100K (VOLUME)
RV301	1-230-418-11	RES, VAR, SLIDE 250K (BALANCE)
RV302	1-230-419-11	RES, VAR, SLIDE 100K/100K (BASS)
RV303	1-230-419-11	RES, VAR, SLIDE 100K/100K (TREBLE)
RV352	1-230-419-11	RES, VAR, SLIDE 100K/100K (BASS)
RV353	1-230-419-11	RES, VAR, SLIDE 100K/100K (TREBLE)
RY301	1-515-533-11	RELAY
S101	1-554-835-11	SWITCH, PUSH (5 KEY)(PHONO)
S102	1-554-835-11	SWITCH, PUSH (5 KEY)(TUNER)
S103	1-554-835-11	SWITCH, PUSH (5 KEY)(CD)
S104	1-554-835-11	SWITCH, PUSH (5 KEY)(AUX)
S105	1-554-835-11	SWITCH, PUSH (5 KEY)(TAPE)
S201	1-554-833-11	SWITCH, PUSH (1 KEY)(LOUDNESS)
S301	1-554-834-11	SWITCH, PUSH (2 KEY)(SPEAKERS A)
S302	1-554-834-11	SWITCH, PUSH (2 KEY)(SPEAKERS B)
S601 ⚠	1-553-318-00	(US)....SWITCH, PUSH (AC POWER) (1 KEY)(POWER)
S601 ⚠	1-554-685-31	(AEP,G-AEP,UK)...SWITCH, PUSH (AC POWER)(1 KEY)(POWER)
T1 ⚠	1-447-827-11	(AEP,G-AEP,UK)...TRANSFORMER, POWER
T1 ⚠	1-447-828-11	(US).....TRANSFORMER, POWER
TM601	1-536-706-00	TERMINAL BOARD (SP)

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked " ● " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part numbers (Δ-ΔΔΔ-ΔΔΔ-XX or Δ-ΔΔΔΔ-ΔΔΔ-X) may be different from those used in the set.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:

- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:μF, PF:μμF.

COILS

- MMH : mH, UH : μH

SEMICONDUCTORS

In each case, U : μ, for example:
UA···: μA···, UPA···: μPA···, UPC···: μPC,
UPD···: μPD···

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